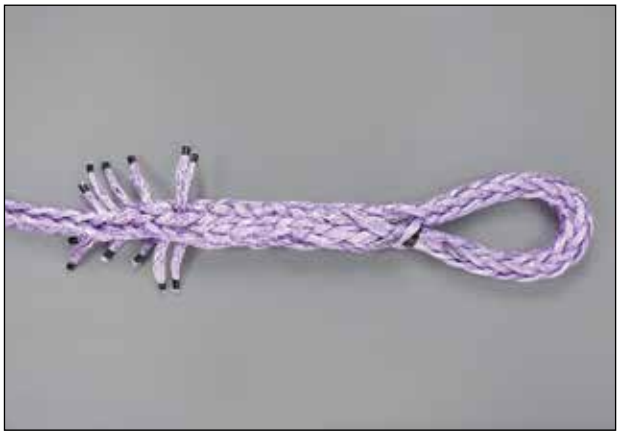
Splicing Instructions

Modified Tuck Eye Splice

CORTLAND INTERNATIONAL™

Introduction



Modified Tuck Eye Splice

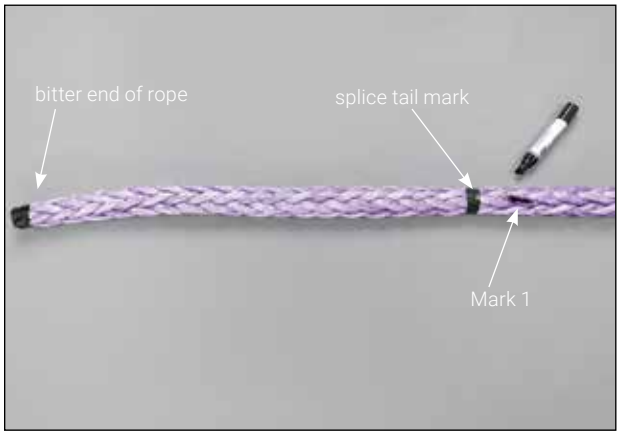
This document describes the steps required to perform a Modified Tuck Eye Splice. This splice procedure is designed for use in situations where the standard Moran 5--4--3 Tuck Splice is deemed too long for the intended application. The resulting splice will have a finished length approximately 63% as long as a conventional tuck splice. This splice can be used for all conventional 12 and 12x12 strand constructions; however, for ropes supplied with low coefficient of friction coatings (such as LoCo, etc.), a slightly longer splice is required as noted in the steps below.

The following tools are required to perform the splice:

- Adhesive tape (paper or plastic)
- Marking pen
- Scissors
- Fid (tubular or other type)
- Large ruler
- Knife

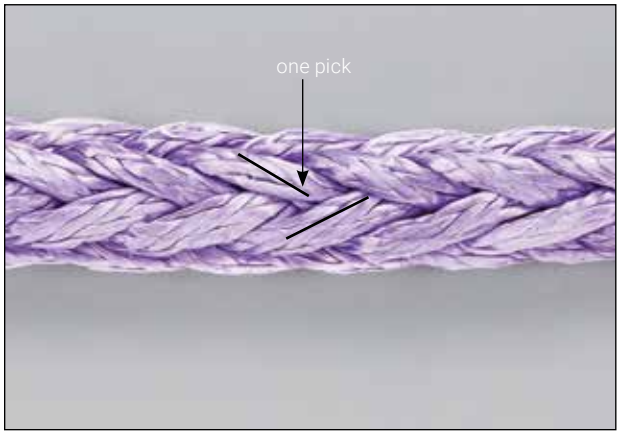
All splicing should be performed on a clean, flat surface.

Step 1 Rope set-up



1.1 Mark a length 18 picks down from the bitter end of the rope and put a piece of tape tightly around the circumference of the rope at this point. This is the Splice Tail Mark. A pick is a point on the braid in which one strand in the left or "S" direction crosses over or under a strand in the right or "Z" direction, as shown in the photo. Next, count down one additional pick and mark with a black marker. This is Mark 1.

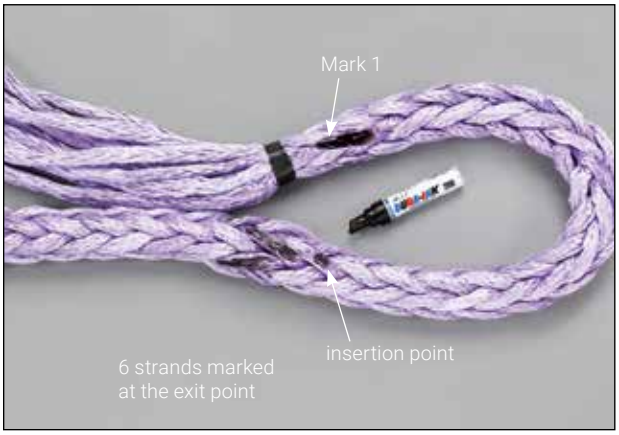
NOTE: For ropes with a low coefficient of friction coating (LoCo, etc.) mark a length equal to 25 picks down from the bitter end and tape the rope at this point. Then make Mark 1 as described above.



1.2 Unlay the end of the rope and tape the end of each strand. Continue unlaying the rope back to the piece of tape at the Splice Tail Mark.

Step 2 Measuring and Marking

2.1 The rope is made up of six “S” or left direction strands and six “Z” or right direction strands. One “S” and one “Z” strand should be combined together to form a strand pair. The paired “S” and “Z” strands should be adjacent to each other at the point where they exit from the tape placed around the circumference of the rope. After an adjacent “S” and “Z” strand have been paired up, tape the two strands together. A total of six strand pairs will be formed in this manner.



2.2 Using Mark 1 as a reference point, form the size of eye required. When forming the eye make sure that there is no twist in the rope. When the eye is formed to the desired size make a mark on the body of the rope opposite to the Mark 1. This is the Insertion Point.

Leaving the rope in position to maintain the shape of the soft eye, count 2 picks down from the insertion point and mark one of the strands at the 2nd strand. This is a Strand Mark or Exit Point.

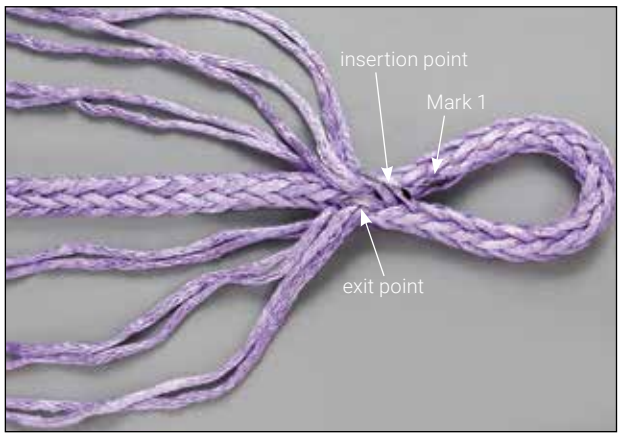
At the location of the 1st Strand Mark, mark an additional five (5) strands around the circumference of the rope. A total of six (6) strands (three left and three right strands) should be marked when this step is completed. Adjacent marked strands should form a ‘V’ pattern around the circumference of the rope. The six (6) marked strands identify the Exit Point.

Step 3 Starting the Splice

3.1 While keeping the shape of the soft eye, form an opening between two adjacent strands at the Insertion Point to allow a Strand Pair to be inserted. A Swedish Fid or similar tool may be used during this process. If a Swedish Fid is used, insert it at the Exit Point under one of the Strand Marks and bring the tip of the fid out at the Insertion Point between the two adjacent strands.

Insert one Strand Pair into the opening at the Insertion Point and bring it out under a Strand Mark at the Exit Point. During this procedure check to make sure that the eye has not become twisted. Pull the Strand Pair partially through leaving some space between the Insertion Point and the Splice Tail Mark.

3.2 Repeat the previous step by inserting another strand pair in at the Insertion Point and out at an Exit Point. This Strand Pair should be brought out under the Strand Mark that is adjacent to the one used in the previous step. Continue this procedure until all six Strand Pairs have been inserted and pulled through to their respective Exit Points. Completion of this step will result in one common Insertion Point and six Exit Points at the individual Strand Marks as shown to the left.

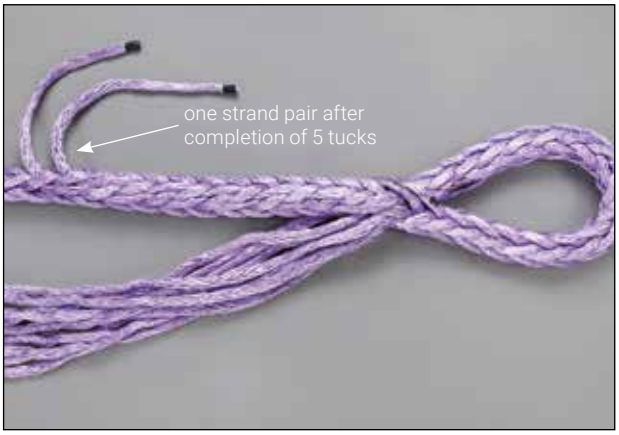


3.3 Working from the Exit Points, slowly pull each Strand Pair until the Splice Tail Mark is at the Insertion Point. Remove the tape from the Splice Tail Mark and continue to pull on the Strand Pairs until Mark 1 has reached the Insertion Point.

Step 4 Performing the Tucks

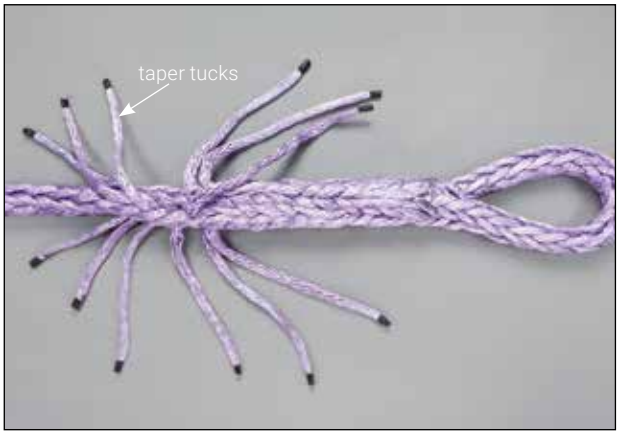
4.1 Select any one Strand Pair and remove the tape holding the two strands together to form two individual tucking strands. The tucks will be made with each individual strand down the length of the rope. The strands that the tucking strands will be tucked over and under run in a straight line down the body of the rope.

Take one of the two tucking strands and pass it over one strand in the body of the rope and under one strand. Then take the other tucking strand and go over the strand in the body of the rope that the first strand went under and then under the next strand to complete the first tuck. This produces a tuck in which the two tucking strands alternate passing under and over strands in the body of the rope. Repeat this process for all six Strand Pairs.

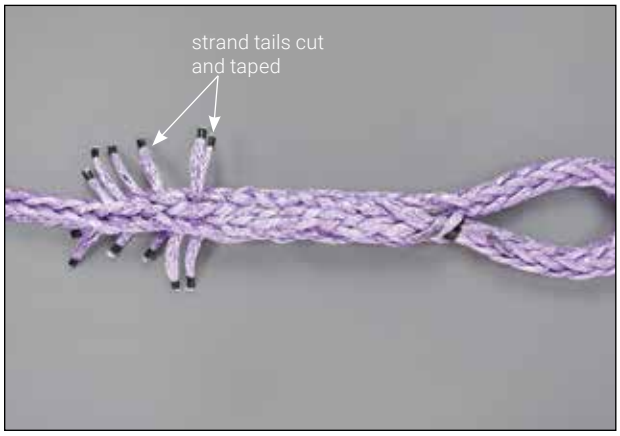


4.2 A total of five complete tucks will be made with each tucking strand. When the five tucks are completed six of the individual tucking strands will be located slightly further down the body of the rope than the other six strands.

NOTE: For ropes with a low coefficient of friction coating, a total of eight complete tucks will be made with each tucking strand.



4.3 The final set of two taper tucks is performed in the same manner as the previous tucks by using every other individual tucking strand. As before, select any one individual strand and perform two tucks (over one strand and under one strand) down the length of the rope. Then skip every other stand and do two tucks with the remaining five strands.



4.4 After all of the tucks have been completed the ends of the strands can be cut off at a point about one rope circumference in length away from the point where they exit from the last tuck. The ends of the strands should be tightly taped after cutting.

4.5 The completed Modified Tuck Eye Splice.

Glossary

Bitter End – End of the rope closest to the working area.

Core – Inner braid of a double braid rope. The core is contained within the cover braid.

Core Dependent Rope – A double-braid rope in which the core carries the entire load and the cover is primarily for protection from abrasion and external damage.

Cover/Sleeve/Jacket – Outer braid of a double braid rope that covers the core braid.

Cross Stitching – A series of sewing stitches using twine that locks a splice into place to prevent it from slipping or being pulled apart. Reference Cortland's Cross Stitching Instructions, CT_TL_060 document.

Crossover – The point in a splice where the core enters the cover and the cover enters the core.

Eye Allowance – Length of the rope that determines the final eye size.

Eye Splice – The splice that is necessary to form an eye at the end of a rope.

Fid – A metal, wood or plastic tool used as an aid in splicing. Fids typically are tapered at one end and have a method to allow attaching the cover or core of the rope being spliced at the other end. Some fids are also intended to be used as a measuring tool when laying out the splicing marks on the rope.

Fid Length – A fid length is a unit of measurement originally based on the design of tubular fids used for splicing double braids. A fid length is now generally defined as 7 x the rope circumference or 21 x the rope diameter.

Grommet – (or Endless Grommet or Endless Loop) – A line that is spliced into a loop rather than having eyes.

Milk – The act of removing slack in the cover or core by sliding the loose braid back over the rope element that has been buried inside the loose section.

Pick – A point on either the core or cover braid in which one strand in the left or "S" direction crosses over or under a strand in the right or "Z" direction.

Splice – The process used to make an eye or join two ends of rope together.

Standing End – The end of the rope not in use.

Standing Part – The central section of rope away from the end being used or spliced.

Strands – A twisted (S twist or Z twist) bundle of yarn comprising one of the discrete components used to make a braided rope.

S-Twist – A strand in which the fibers are twisted in a left-hand direction.

Taper – Trimming or cutting a strand or braid so that it gradually becomes thinner toward one end.

Thimble – A ring or tear-drop shaped form, often of metal or plastic, that fits on the rope on the inside of an eye splice. It is used to prevent sharp bending of the rope at the top of the eye & to protect the inside of the eye from chafing or cutting.

Unlay (Unbraid) – To take apart and separate the strands of a rope into individual components.

Whipping – Securing rope ends or sections of a rope or splice by wrapping twine tightly around the object to be whipped.

Z-Twist – A strand in which the fibers are twisted in a right-hand direction.

Notes

Notes

Notes

Cortland International operates one of the world's largest synthetic rope and net manufacturing organizations, with the capacity to produce 50,000–70,000 metric tons annually. Partnering closely with customers, our team leverages deep expertise in engineering, manufacturing, and operational excellence to turn ideas into proven, reliable products.

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